



Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	09/760,384
		Filing Date	January 11, 2001
		First Named Inventor	DUONG, Hau H.
		Group Art Unit	1743
		Examiner Name	Sines, Brian J.
Sheet 1 of 4	Attorney Docket Number	A-68718-2/RFT/RMS/RMK (463037-217)	

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**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A0	4,713,347	12-15-1987	Mitchell et al.	
	A1	4,735,907	04-05-1988	Schaeffer et al.	
	A2	4,877,830	10-31-1989	Dobeli et al.	
	A3	4,920,047	04-24-1990	Giaever et al.	
	A4	5,156,810	10-20-1992	Ribi	
	A5	5,192,507	03-09-1993	Taylor et al.	
	A6	5,296,375	03-22-1994	Kricka et al.	
	A7	5,304,487	04-19-1994	Wilding et al.	
	A8	5,308,754	05-03-1994	Kankare et al.	
	A9	5,486,335	01-23-1996	Wilding et al.	
	A10	5,491,097	02-13-1996	Ribi et al.	
	A11	5,498,392	03-12-1996	Wilding et al.	
	A12	5,552,270	09-03-1996	Khrapko et al.	
	A13	5,565,552	10-15-1996	Magda et al.	
	A14	5,585,069	12-17-1996	Zanzucchi et al.	
	A15	5,587,128	12-24-1996	Wilding et al.	
	A16	5,593,838	01-14-1997	Zanzucchi et al.	
	A17	5,603,351	02-18-1997	Cherukuri et al.	
	A18	5,632,876	05-27-1997	Zanzucchi et al.	
	A19	5,632,957	05-27-1997	Heller et al.	
	A20	5,635,358	06-03-1997	Wilding et al.	
	A21	5,637,469	06-10-1997	Wilding et al.	
	A22	5,643,738	07-01-1997	Zanzucchi et al.	
	A23	5,681,484	10-28-1997	Zanzucchi et al.	
	A24	5,700,667	12-23-1997	Marble et al.	
	A25	5,705,348	01-06-1998	Okamoto et al.	
	A26	5,726,026	03-10-1998	Wilding et al.	
	A27	5,747,169	05-05-1998	Fan et al.	
	A28	5,755,942	05-26-1998	Zanzucchi et al.	
	A29	5,770,029	06-23-1998	Nelson et al.	
	A30	6,013,170	01-11-2000	Meade	
	A31	6,013,459	01-11-2000	Meade	
	A32	6,090,545	07-18-2000	Wohlstadler et al.	
	A33	6,100,045	08-08-2000	Van Es	
	A34	6,100,099	08-08-2000	Gordon et al.	

Examiner Signature	Date Considered
<i>[Signature]</i>	3/15/2004

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		Examiner Name	Sines, Brian J.		
Sheet	2	of	4	Attorney Docket Number	A-68718-2/RFT/RMS/RMK (463037-217)

**U.S. PATENT DOCUMENTS**

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	A35	6,211,356 B1	04-03-2001	Wiessler et al.	
	A36	6,258,593 B1	07-10-2001	Schembri et al.	
	A37	6,326,211 B1	12-04-2001	Anderson et al.	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No.	Foreign Patent Document Country Code <sup>2</sup> Number <sup>2</sup> Kind Code <sup>3</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>4</sup>
	B1	EP 0 439 036	07-31-1991	Hoffman-La Roche AG	Abstract	
	B2	EP 0 478 319 A1	04-01-1992	Tokyo Shibaura Elect. Co.		
	B3	EP 0 637 996 B1	02-15-1995	Trustees of Univ. of Pennsylvania		
	B4	EP 0 637 998 B1	02-15-1995	Trustees of Univ. of Pennsylvania		
	B5	WO 93/23425 A1	11-25-1993	The Ontario Cancer Inst.		
	B6	WO 94/22889 A1	10-13-1994	Cis Bio International		
	B7	WO 95/35102 A1	12-28-1995	NexStar Pharmaceuticals, Inc.		
	B8	WO 96/15450 A1	05-23-1996	David Sarnoff Research Center		
	B9	WO 96/15576 A1	05-23-1996	David Sarnoff Research Center		
	B10	WO 96/39252 A1	12-12-1996	David Sarnoff Research Center		
	B11	WO 96/39260 A1	12-12-1996	David Sarnoff Research Center		
	B12	WO 97/16561 A1	05-09-1997	David Sarnoff Research Center		
	B13	WO 97/27324 A1	07-31-1997	David Sarnoff Research Center		
	B14	WO 97/37755 A1	10-16-1997	Sarnoff Corporation		
	B15	WO 97/43629 A1	11-20-1997	Sarnoff Corporation		
	B16	WO 97/46568 A1	12-11-1997	Calif. Inst. of Technology		
	B17	WO 98/13683 A1	04-02-1998	Sarnoff Corporation		
	B18	WO 98/31839 A2	07-23-1998	Harvard College		
	B19	WO 99/33559 A1	07-08-1999	Cepheid		

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>4</sup>
	C1	ALEXANDER, V., "Design and Synthesis of Macrocyclic Ligands and their Complexes of Lanthanides and Actinides," Chem. Rev. 95(2):273-342 (Mar. - Apr. 1995).	

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	C2	ANNE, A., et al., "Synthesis of first ferrocene labeled dideoxynucleotide and its use for 3'redox end-labeling of 5' modified single stranded oligonucleotides," <i>Bioconjug. Chem.</i> 12(3):396-405 (May - Jun. 2001).	
	C3	CODINGTON, J.F., et al., "Nucleosides. XIII. Synthesis of 3'-Amino-3'-deoxy-arabinosyl-uracil via 2', 3'-Epoxy-lyxosyl Nucleosides," <i>J. Org. Chem.</i> 27(1):163-167 (Jan. 1962).	
	C4	CONWAY, N.E., et al., "Site-specific attachment of labels to the DNA backbone," in <i>Oligonucleotides and Analogues: A Practical Approach</i> , 211-239, Eckstein, F. (ed.), IRL Press: Oxford, GB (1991).	
	C5	DWYER, T., et al., "Structural Analysis of Covalent Peptide Dimers, Bix(pyridine-2-carboxamidonetropsin) (CH2) 3-6, in Complex with 5'-TGACT-3' Sites by Two Dimensional NMR," <i>J. Am. Chem. Soc.</i> 115(22):9900-9906 (1993).	
	C6	GAIT, M.J., "Oligoribonucleotide Synthesis," in <i>Oligonucleotides and Analogues: A Practical Approach</i> , 25-48, Eckstein, F. (ed.), IRL Press: Oxford, GB (1991).	
	C7	GILLES, P.N., et al., "Single nucleotide polymorphic discrimination by an electronic dot blot assay on semiconductor microchips," <i>Nat. Biotechnol.</i> 17(4):365-370 (Apr. 1999).	
	C8	GLOVER, D., et al., "Alternating current Polarography in the Harmonic Multiplex Mode," <i>Anal. Chem.</i> 45(11):1869-1877 (Sep. 1973).	
	C9	KIRSCHENHEUTER, G., et al., "An Improved Synthesis of 2'-Azido-2'-Deoxyuridine," <i>Tet. Lett.</i> 35(46):8517-8520 (1994).	
	C10	KRIDER, E.S., et al., "Electron transfer in DNA: covalent attachment of spectroscopically unique donor and acceptor complexes," <i>JBC</i> 3:222-225 (1998).	
	C11	KRIDER, E.S., et al., "Automated Synthesis of 3' Metalated Oligonucleotides," <i>Inorg. Chem.</i> 40(16):4002-4009 (Jul. 2001).	
	C12	KUMAR, A., et al., "A Simple Method for Introducing -SH/COOH Group at 5'-CH end of Oligonucleotide," <i>Nucleosides Nucleotides</i> 11(5):999-1002 (1992).	
	C13	LIU, R., et al., "Passive mixing in a three-dimensional serpentine microchannel," <i>J. Microelectromechanical Systems</i> 9(2):190-196 (Jun. 2000).	
	C14	MENGEL, R., et al., "A Simple Synthesis of 2'-Deoxy-2'-fluorocytidine by Nucleophilic Substitution of 2,2 -Anhydrocytidine with Potassium Fluoride/Crown Ether," <i>Angew. Chem. Intl. Ed. Engl.</i> 17(7):525 (1978).	
	C15	MILLAN, K.M., et al., "Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators," <i>Anal. Chem.</i> 65(17):2317-2323 (Sep. 1993).	
	C16	MILLER, N., et al., "Nucleosides. XXI. Synthesis of Some 3'-Substituted 2',3'-Dideoxyribonucleosides of Thymine and 5-Methylcytosine," <i>J. Org. Chem.</i> 29:1772-1776 (Jul. 1964).	
	C17	MITSUI, T., et al., "Coumarin-fluorescein pair as a new donor-acceptor set for fluorescence energy transfer study of DNA," <i>Tet. Lett.</i> 41(15):2605-2608 (2000).	
	C18	NAPIER, M., et al., "Probing biomolecule recognition with electron transfer: electrochemical sensors for DNA hybridization," <i>Bioconjug. Chem.</i> 8(6):906-913 (Nov. - Dec. 1997).	
	C19	O'DONNELL-MALONEY, M., et al., "The development of microfabricated arrays for DNA sequencing and analysis," <i>Trends Biotechnol.</i> 14(10):401-407 (Oct. 1996).	
	C20	PIEKEN, W.A., et al., "Kinetic Characterization of Ribonuclease-Resistant 2'-Modified Hammerhead Ribozymes," <i>Science</i> 253(5017):314-317 (Jul. 1991).	
	C21	SEBESTA, D., et al., "2'-Deoxy-2'-Alkoxyaminouridines: Novel 2'-Substituted Uridines prepared by Intramolecular Nucleophilic Ring Opening of 2,2'-O-Anydrouridines," <i>Tetrahedron</i> 52(46):14385-14402 (Nov. 1996).	
	C22	SINHA, N.D., et al., "Oligonucleotides with reporter groups attached to the 5'-Terminus," in <i>Oligonucleotides and Analogues: A Practical Approach</i> , 185-210, Eckstein, F. (ed.), IRL Press: Oxford, GB (1991).	

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	C23	SPROAT, B.S., et al., "2-O-Methyloligonucleotides: synthesis and applications," in <i>Oligonucleotides and Analogues: A Practical Approach</i> , 211-239, Eckstein, F. (ed.), IRL Press: Oxford, GB (1991).	
	C24	UTO, Y., et al., "Electrochemical analysis of DNA amplified by the polymerase chain reaction with a ferrocenylated oligonucleotide," <i>Anal. Biochem.</i> 250:122-124 (1997).	
	C25	VERHEYDEN, J.P.H., et al., "Synthesis of some pyrimidine 2'-amino-2'-deoxynucleosides," <i>J. Org. Chem.</i> 36(2):250-254 (1971).	
	C26	XI, Z., et al., "New Stereocontrolled Synthesis of Isomeric C-Branched $\beta\beta$ -D-Nucleosides by Intramolecular Free-Radical Cyclization-Opening Reactions Based on Temporary Silicon Connection," <i>Tetrahedron</i> 48(2):349-370 (1992).	
	C27	YU, C., et al., "2' ribose ferrocene oligonucleotides for electronic detection of nucleic acids," <i>J. Org. Chem.</i> 66(9):2937-2942 (May 2001).	
	C28	ZIMMERMAN, R., et al., "DNA stretching on functionalized gold surfaces," <i>Nucleic Acids Res.</i> 22(3):492-497 (Feb. 1994).	

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